

CLAIMS

1. A monolithic component protecting a line against overvoltages greater than a determined positive threshold or smaller than a determined negative threshold, including in anti-parallel a cathode-gate thyristor (Th1) and an anode-gate thyristor (Th2) connected between a first terminal (L1A) of the line to be protected and a reference voltage, the gate of the cathode-gate thyristor being connected to a negative threshold voltage (-V) via a gate current amplification transistor (T1), the gate of the anode-gate thyristor being connected to a positive threshold voltage (+V), characterized in that:

- the monolithic component is made in a substrate of the first conductivity type divided into wells separated by isolating walls (3, 4), the smaller surfaces of which are coated with insulating layers (5, 6), the smaller surface of the substrate being uniformly coated with a metallization (M1),

- the gate current amplification transistor (T1) of the cathode-gate thyristor is made in vertical form in a first well,

- the cathode-gate thyristor (Th1) is implemented in vertical form in a second well,

- the anode-gate thyristor (Th2) is implemented in vertical form in a third well,

- the smaller surface metallization (M1) links up the collector of the transistor, the anode of the cathode-gate thyristor, and the cathode of the anode-gate thyristor,

- a first front surface metallization (M2) connects the cathode of the cathode-gate thyristor to the anode of the anode-gate thyristor,

- a second front surface metallization (M3) connects the gate of the cathode-gate thyristor to the emitter of the transistor, and

- a third front surface metallization is in contact with the gate of the anode-gate thyristor.

2. The component of claim 1, further including a diode (D1), the anode of which is connected to the gate of the

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anode-gate thyristor, characterized in that the diode is implemented in the form of a P-type region (46) itself formed in an N-type region (45), the latter being formed in the cathode-gate region (42) of the anode-gate thyristor, on the upper surface side of the component.

3. The component of claim 1, wherein the gate of the cathode-gate thyristor is connected to a second terminal of the line to be protected (L1B).

4. The component of claim 1 or 2, further ensuring a protective function against overcurrents, in which the gates of the cathode-gate and anode-gate thyristors are interconnected and connected to a second terminal of the line to be protected (L1B).

5. The component of claim 4 taken as attached to claim 1, further including a gate current amplification transistor (T2) associated with the anode-gate thyristor, characterized in that this transistor, of PNP type, is formed on the upper surface of the component, the collector region (61) extending via isolating walls (62, 63) towards the smaller surface and being in contact with the smaller surface metallization (M1).

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